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(71) 出願人 000005108

株式会社日立製作所

東京都千代田区神田駿河台四丁目6番地

(72) 発明者 平井 遼

神奈川県横浜市戸塚区吉田町292番地 株

式会社日立製作所情報映像事業部内

(72) 発明者 浮野 新二

神奈川県横浜市戸塚区吉田町292番地 株

式会社日立製作所情報映像事業部内

(72) 発明者 高橋 宏明

神奈川県横浜市戸塚区吉田町292番地 株

式会社日立製作所情報映像事業部内

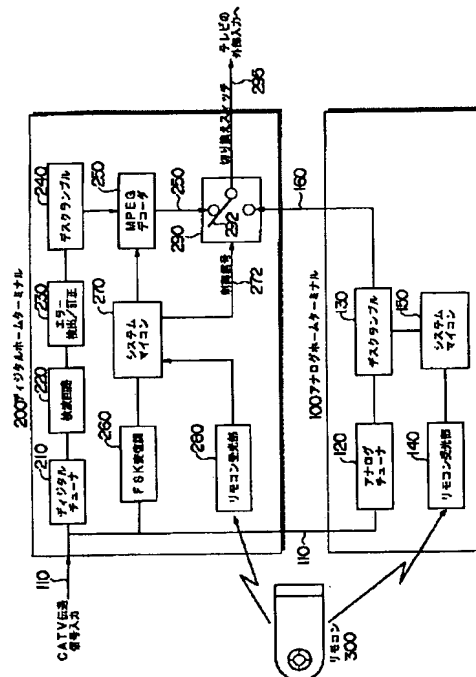
(74) 代理人 弁理士 沼形 義彰 (外1名)

(54) 【発明の名称】 CATV受信端末装置

(57) 【要約】

【目的】 アナログチャンネルとデジタルチャンネルを装置側で判別して回路の出力を切り換えるCATV受信要端末装置を提供する。

【構成】 CATVの受信端末装置は、アナログチャンネル用のホームターミナル100と、デジタルチャンネル用のホームターミナル200を有し、ネットワークから送信されるCATV信号はライン110を介して両ターミナルに入力される。ユーザがリモコン300を介してデジタル伝送信号に割り当てられたチャンネルを選択すると、システムマイコン270は、切り換えスイッチ290をデジタル側へ切り換えて、回路で処理されたデジタル信号をテレビ側へ送り出す。アナログチャンネルが選択されると、切り換えスイッチ290は切り換えられてアナログターミナルの出力をテレビ側へ送り出す。



## 【特許請求の範囲】

【請求項 1】 C A T V 放送局と、C A T V ネットワークと、ユーザ家庭に設置される受信端末装置を有する C A T V ネットワークシステムの受信端末装置であって、デジタル伝送信号用のチューナと、デジタル伝送信号のデスクランブルを実行するデスクランブル回路と、圧縮されたデジタル信号を伸長処理する回路と、C A T V 放送局から伝送される制御信号を復調する回路と、制御用のマイコンとを備えてなる C A T V 受信端末装置。

【請求項 2】 C A T V 放送局と、C A T V ネットワークと、ユーザ家庭に設置される受信端末装置を有する C A T V ネットワークシステムの受信端末装置であって、アナログ伝送信号用の第 1 のチューナと、デジタル伝送信号用の第 2 のチューナと、選択されたチャンネル番号がアナログ用のチャンネルかデジタル用のチャンネルかを判断するマイコンと、マイコンからの制御信号により、第 1 のチューナと第 2 のチューナの出力を切り換えてテレビセットへ送信するスイッチとを備えてなる C A T V 受信端末装置。

【請求項 3】 受信端末装置を遠隔制御するリモートコントローラは、アナログチャンネル選択用のスイッチと、デジタルチャンネル選択用のスイッチを備えてなる請求項 2 記載の C A T V 受信端末装置。

【請求項 4】 C A T V 放送局から伝送される制御信号によってアナログチャンネルとデジタルチャンネルの境界を変更する機能を備える請求項 2 記載の C A T V 受信端末装置。

## 【発明の詳細な説明】

## 【0001】

【産業上の利用分野】本発明はデジタル放送番組を供給する C A T V (ケーブルテレビ) ネットワークの受信端末装置に関する。

## 【0002】

【従来の技術】現在、C A T V は、C A T V 局と受信機とをケーブルで接続し、アナログ信号により番組を提供している。C A T V 局は、受信機を所有する利用者契約によってネットワークを組み、有料で各種の番組をサービスしている。利用者は、通常の T V セットにネットワーク側から支給される C A T V 受信端末装置〔H T (ホームターミナル) と称される〕を接続し、ケーブルから送られてくるスクランブル処理したアナログ信号を解読(デスクランブル)し、T V セット上で番組を再現する。

## 【0003】

【発明が解決しようとする課題】デジタル衛星を用いた T V 用のデジタル放送が供給されるようになると、このデジタル放送番組も既存の C A T V ネットワークに供給されることとなる。デジタル放送を受信するためには、デジタル放送受信用の H T を増設する必要が

ある。現在の C A T V 用の H T にあっても、T V セットを操作するリモコンに加えて H T 用のリモコンが必要である。この上にデジタル用の H T のリモコンが付加されることになると、ユーザの操作が繁雑になってしまう。本発明は、C A T V 用の受信端末装置を提供するものである。

## 【0004】

【課題を解決するための手段】本発明の C A T V の受信端末装置は、基本的な手段として、デジタル伝送信号用のチューナと、デジタル伝送信号のデスクランブルを実行するデスクランブル回路と、圧縮されたデジタル信号を伸長処理する回路と、C A T V 放送局から伝送される制御信号を変調する回路と、制御用のマイコンとを備える。また、この受信端末装置は、アナログ伝送信号用の第 1 のチューナと、デジタル伝送信号用の第 2 のチューナと、選択されたチャンネル番号がアナログ用のチャンネルかデジタル用のチャンネルかを判断するマイコンと、マイコンからの制御信号により、第 1 のチューナと第 2 のチューナの出力を切り換えてテレビセットへ送信するスイッチとを備える。

【0005】さらに、受信端末装置を遠隔制御するリモートコントローラは、アナログチャンネル選択用のスイッチと、デジタルチャンネル選択用のスイッチを備える。そして、この受信端末装置は、C A T V 放送局から伝送される制御信号によってアナログチャンネルとデジタルチャンネルの境界を変更する機能を備えるものである。

## 【0006】

【作用】以上の手段を備えることによって、ユーザは選択するチャンネルがアナログ伝送信号用のチャンネルか、デジタル伝送信号用のチャンネルかを意識する必要はなく、端末装置側でチャンネルを識別してテレビセットへ出力する。

## 【0007】

【実施例】図 1 はアナログ放送に加えてデジタル放送をサービスする C A T V のネットワークシステムの概要を示す説明図である。全体を符号 1 で示すシステムは、C A T V 放送局 10 と、C A T V 放送局 10 から送り出される T V 番号の伝送信号をケーブルを介して伝達する C A T V 広域ネットワーク 20 と、この広域ネットワーク 20 にケーブルを介して接続される複数のユーザ 30 で構成される。

【0008】C A T V 放送局 10 は、地上局から発進される放送電波や、放送衛星から発信される放送電波を受信し、さらに映画番組等の独自のサービスをスクランブル処理してネットワーク 20 へ送り出す。ユーザ 30 にあては、このネットワークからの信号を各ユーザの T V セットに付設した C A T V 受信用端末装置(H T)で受信し、H T 内でデスクランブルされた再生信号を T V セットへ送って、番組を再生する。現在の C A T V にあ

っては、これらの伝送信号は全てアナログ信号が使用されている。

【0009】ディジタル放送衛星50が打ち上げられて利用可能となると、地上に設置されたディジタル衛星放送局60からディジタル信号を衛星50へ送信し、衛星50はこの信号を電波に乗せて地上へ送る。地上の個別ユーザ70は、アンテナ75を介してこの電波を受信し、ディジタル放送受信用端末装置を介してディジタル放送をTV上で楽しむことができる。ディジタル放送の再生画像は、アナログ放送の再生画像に比べて画質が高く、高品位の映像を送受信することができるメリットがある。

【0010】CATV放送局10は、このディジタル放送信号をアンテナ15で受信し、スクランブル処理を施してCATV伝送信号に変換してネットワーク20に供給することができる。ユーザ30は、ディジタル信号の受信用端末装置を備え、ディジタル放送番組を受信することができる。

【0011】図2は、CATVの受信用端末装置の構成を示す回路図である。現在、稼働中のCATVのサービスにあっては、ユーザにはアナログホームターミナル100が支給されている。アナログホームターミナル100は、アナログチューナ120、デスクランブル回路130、リモコン受光部140、システムマイコン150等の各デバイスを備え、ネットワーク20に接続されるCATV伝送信号入力ライン110を有する。

【0012】ライン110から入力するアナログ信号は、アナログチューナ120で選択されたチャンネルの信号が選別され、デスクランブル回路130で解読される。この信号はライン160からテレビセットの外部入力端子へ送られ、画像と音声が生再生される。

【0013】リモコン受光部140は、ユーザが操作するリモコンからの指令を受け、システムマイコン150がチューナの操作等を指示する。ユーザはテレビセットのリモコンとホームターミナル100用のリモコン300を操作して、ネットワークから供給される。番組を再生することができる。現在のアナログ番組にあっては、チャンネル番号は、チャンネル1からチャンネル60程度に割り振られている。ディジタル放送にあっては、ディジタルチャンネルとして、例えばチャンネル61より大きな番号が与えられることとなる。

【0014】ディジタル放送受信用のディジタルホームターミナル200は、ディジタルチューナ210、検波回路220、エラー検出／訂正回路、デスクランブル回路240、MPEGデコーダ250、FSK変復調回路260、システムマイコン270、リモコン受光部280、切り換えスイッチ290等を備える。

【0015】ディジタルホームターミナル200は、入力ライン110から供給されるディジタル信号をディジタルチューナ210で選択し、指定されたチャンネルの

信号を選別して検波回路220へ送る。検波回路220、エラー検出／訂正回路230を通過したディジタル信号は、デスクランブル回路240で解読され、MPEGデコーダ250へ送られる。

【0016】一方、入力ライン110からの信号は、FSK変復調回路260を介してシステムマイコン270へ送られる。リモコン受光部280は、リモコン300から送られてくるユーザの指示をシステムマイコン270へ送る。システムマイコン270は、ディジタルチューナ210を操作するとともに、MPEGデコーダ250を制御して圧縮データを伸長して再生する。再生された信号はライン255を介して切り換えスイッチ290へ送られる。

【0017】システムマイコン270は、リモコン300等を介してユーザが選択するチャンネルがディジタルチャンネル（例えばチャンネル61より大きなチャンネル番号）である場合には、ライン272を介して切り換えスイッチ290に指令を送り、MPFGデコーダ250の出力ライン255をテレビの外部入力ターミナルへのライン295に接続する。この処理によってユーザが指定したディジタル放送番組がテレビセットで再生される。

【0018】ユーザがリモコン300でアナログチャンネル（例えばチャンネル1～チャンネル60のいずれかのチャンネル）を選択すると、リモコン300の指令は、アナログホームターミナル100の受光部140からシステムマイコン150へ送られるとともに、ディジタルホームターミナル200の受光部280からシステムマイコン270へ送られる。

【0019】ディジタルホームターミナル200のシステムマイコン270は、リモコン300からの指令がアナログチャンネルであることを判別し、ライン272に制御信号を出力し、切り換えスイッチ290の接点292をアナログホームターミナル100の出力ライン160側に切り換える。この処理によって、アナログ番組の信号がテレビの外部入力ライン295へ供給され、ユーザが指定したアナログ番組がテレビで再生される。このCATV受信用端末装置は以上のように、ユーザが指定するチャンネル番号に応じて端末装置がアナログ番組かディジタル番組かを自動的に判別してテレビの入力信号を切り換える。

【0020】したがって、ユーザは希望する番組がアナログ番組かディジタル番組かを指定する必要はなく、操作性は向上する。なお、指定されたチャンネル番号がアナログ番組かディジタル番組かの境界は、システムマイコン270のソフトを変更することで自由に設定することができる。

【0021】図3は、リモコン300の構造の一例を示す説明図である。リモコン300は、ケーシング301上に各種のプッシュボタン式のキーを有する。キー31

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0はCATVのホームターミナル100、200の入力スイッチであり、このキーを押すことによって、ホームターミナル100、200の電源がオンとなる。

【0022】テンキー320はチャンネル番号を入力するキーである。TV電源キー340はテレビセットの電源用のキーであり入力切り換えキー342は、テレビセットの入力を外部入力とアンテナ側からの入力に切り換えるキーである。音量キー330、消音キー332は、音声出力を制御するキーであり、チャンネルキー350は、チャンネル番号をサーチしていくためのキーである。

【0023】例えば、アルファベットキーボード360の一部のキーを用いてアナログキー362、デジタルキー364、EPGキー366を用意する。アナログキー362は、アナログ放送番組のみを選択する際に使用し、デジタルキー364はデジタル放送番組のみを選択する際に使用する。EPGキー366は、エレクトロニックプログラムガイド用の呼出しキーであって、デジタル放送サービスで用意される番海メニューをテレビ画面に呼出す際に使用される。上述したリモコンのキーボードの配列は基本的な機能を備えるが、リモコン上に表示手段を備える等、種々のレイアウトが可能である。

【0024】図4は、本発明のCATVネットワークシステムにおけるCATV放送局側から新規加入ユーザの受信端末装置を立ち上げる手順を示す説明図である。CATV受信契約が完了すると、ユーザ30のテレビセットは、図2で説明したデジタルホームターミナル200を介してネットワーク20に接続される。

【0025】CATV放送局は、端末解除信号を送出し、ユーザ30のホームターミナル200を立ち上げる。次に、チャンネルデータを送出して番組を送出する。契約データはユーザがアクセスできる番組の範囲、種類を規制し、アナログ・デジタル切換データは、デジタルホームターミナル200のシステムマイコン270に格納されるアナログチャンネルとデジタルチャンネルの境界のデータを指令するために使用される。これらの制御信号は、ライン110からFSK変復調回路260を介してシステムマイコン270へ送られる。

【0026】本システムにあつては、CATV放送局1

0からユーザ30のホームターミナルに対して伝送信号が送られ、ホームターミナル側からCATV放送局10側にはレスポンスがないものを示しているが、双方向のCATVシステムも当然に適用できる。

【0027】

【発明の効果】本発明は以上のように、現在普及しているアナログ伝送信号を用いたCATVネットワークシステムに対してデジタル伝送信号の放送番組をサービスする際に、デジタル用のホームターミナルが既存のアナログ用のホームターミナルとの切り換えスイッチを備え、選択されたチャンネル番号に応じてホームターミナルがデジタルチャンネルかアナログチャンネルかを自動的に判断して、対応する信号をテレビ側に送るので、ユーザの使い勝手は極めて良くなる。

【0028】アナログチャンネルとデジタルチャンネルの境界は、自由に選択することが可能である。本装置にあつては、ホームターミナルのシステムマイコンでこの境界をソフト的に変更する構成とし、CATV放送局からの制御信号によって、このソフトを変更するので、ユーザの操作を必要としない。以上のように、デジタル放送サービスを行なうCATVネットワークシステムに対して有効な受信端末装置を提供することができる。

【図面の簡単な説明】

【図1】本発明を適用するCATVネットワークシステムの概要を示す説明図。

【図2】本発明の受信端末装置の構成を示すブロック図。

【図3】本発明の受信端末装置のリモコンのキー配列を示す説明図。

【図4】CATV放送局からユーザの受信端末装置へ送出される指令を示す説明図。

【符号の説明】

- 10 CATV放送局
- 20 CATV広域ネットワーク
- 30 ユーザ
- 50 デジタル放送衛星
- 60 デジタル衛星放送送信局
- 100 アナログホームターミナル
- 200 デジタルホームターミナル
- 300 リモコン

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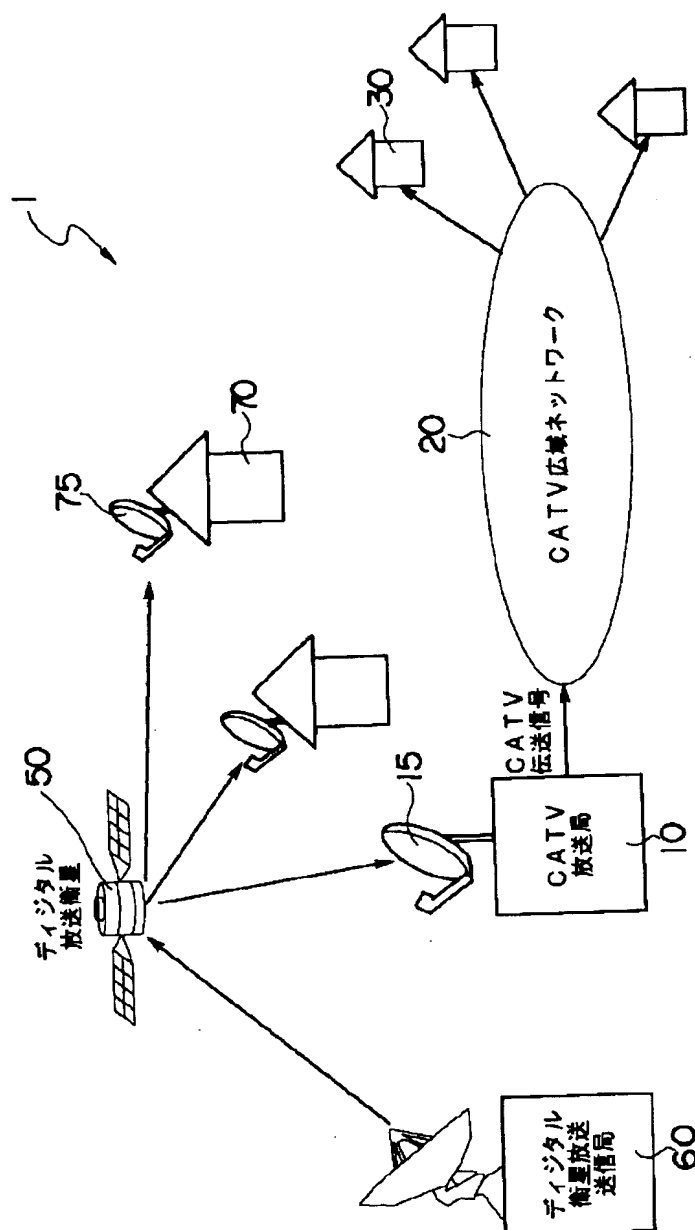
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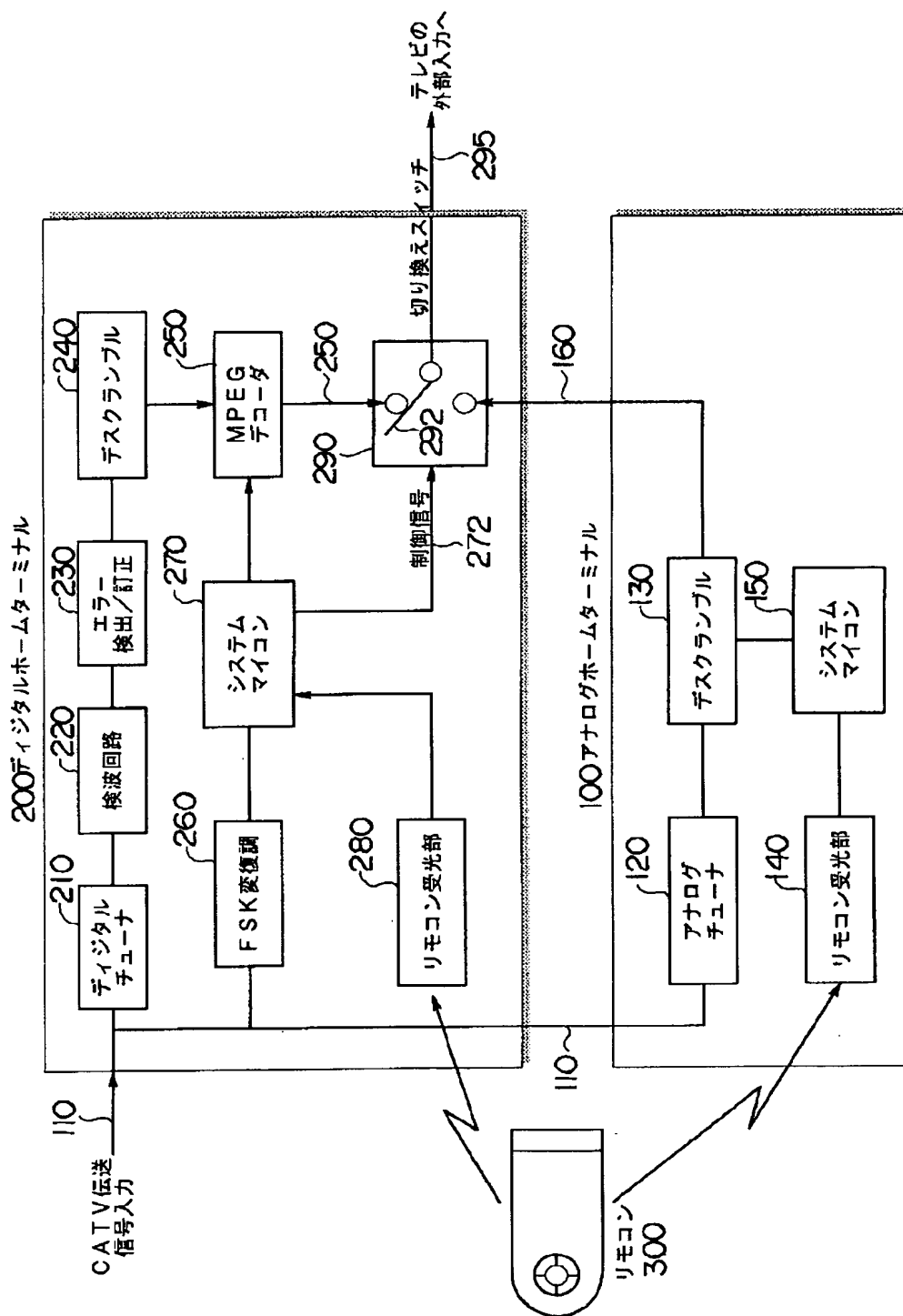
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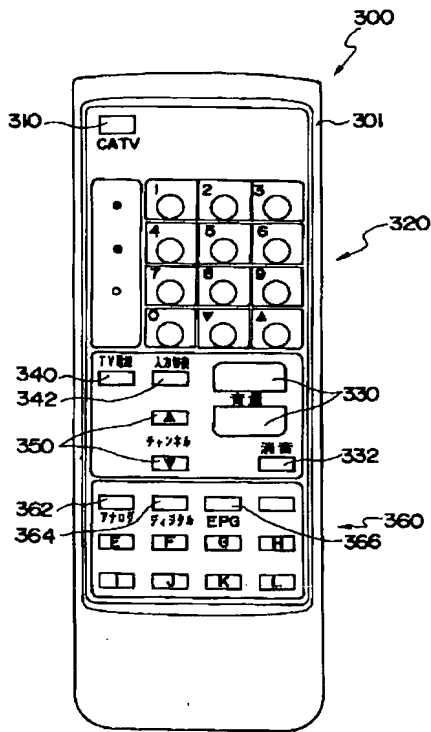
【図1】



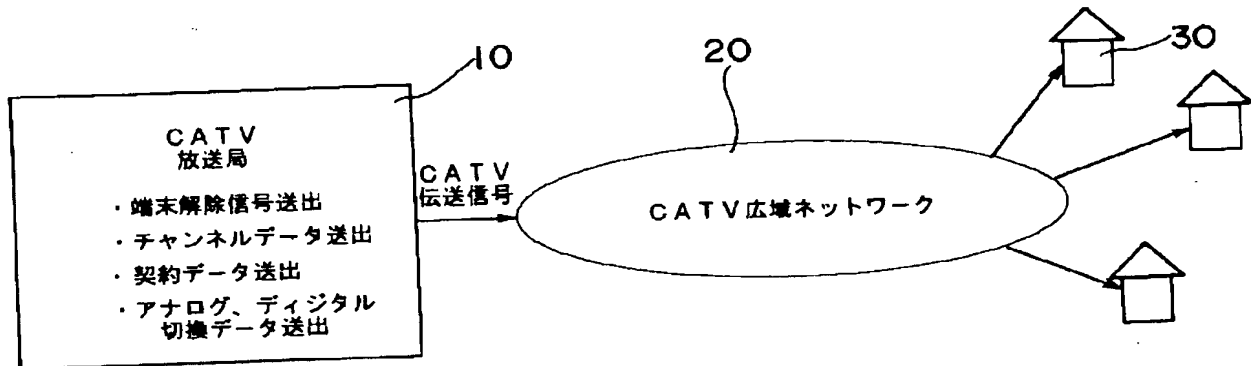
【図2】



【図3】



【図4】



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(21)Application number : 07-214688 (71)Applicant : HITACHI LTD



(22)Date of filing : 23.08.1995 (72)Inventor : HIRAI JUN

NAGINO SHINJI

TAKAHASHI HIROAKI

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(54) CATV RECEPTION TERMINAL EQUIPMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To provide the CATV reception terminal equipment in which an analog channel and a digital channel are discriminated at the equipment side to select a circuit output.

SOLUTION: A reception terminal equipment of a CATV has an analog channel use home terminal 100 and a digital channel use home terminal 200 and gives a CATV signal sent from a network to both the terminals via a line 110. When the user selects a channel allocated to a digital transmission signal via a remote controller 300, a system microcomputer 270 switches a changeover switch 290 to a digital position and the digital signal processed by the circuit is sent to the television side. When an analog channel is selected, the changeover switch 290 is switched to send an output of the analog terminal to the television side.

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[Date of extinction of right]

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2.\*\*\*\* shows the word which can not be translated.

3.In the drawings, any words are not translated.

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## CLAIMS

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[Claim(s)]

[Claim 1] The CATV accepting-station equipment which comes to have the circuit which is accepting-station equipment of the CATV network system which has a CATV broadcasting station, a CATV network, and accepting-station equipment installed in a user home, and restores to the tuner for digital-transmission signals, the descrambling circuit which performs descrambling of a digital-transmission signal, the circuit which carries out expanding processing of the compressed digital signal, and the control signal transmitted from a CATV broadcasting station, and a microcomputer for control.

[Claim 2] It is accepting-station equipment of the CATV network system which has a CATV broadcasting station, a CATV network, and accepting-station equipment installed in a user home. The 1st tuner for analog transmission signals, The 2nd tuner for digital transmission signals and the selected channel number with the control signal from the microcomputer which judges the channel for analogs, or the channel for digital one, and a microcomputer CATV accepting-station equipment which comes to have the switch which switches the

output of the 1st tuner and the 2nd tuner and is transmitted to TV.

[Claim 3] The remote controller which carries out remote control of the accepting-station equipment is CATV accepting-station equipment according to claim 2 which comes to have a switch for analog channel selection, and a switch for digital channel selection.

[Claim 4] CATV accepting-station equipment [ equipped with the function to change the boundary of an analog channel and a digital channel with the control signal transmitted from a CATV broadcasting station ] according to claim 2.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the accepting-station equipment of the CATV (cable television) network which supplies a digital program.

[0002]

[Description of the Prior Art] Current and CATV connect a CATV station and a receiver by the cable, and sponsor the program with the analog signal. By the user contract of owning a receiver, the CATV station constructed the network

and has served various kinds of programs at the charge. A user connects to the usual TV set the CATV accepting-station equipment [called HT (home terminal)] paid from a network side, decodes the analog signal which is sent from a cable and which carried out scramble processing (descrambling), and reproduces a program on TV set.

[0003]

[Problem(s) to be Solved by the Invention] When the digital broadcast for TV using a digital satellite comes to be supplied, this digital program will also be supplied to the existing CATV network. In order to receive digital broadcast, it is necessary to extend HT for digital broadcast reception. Even if it is in HT for current CATV, in addition to the remote control which operates TV set, the remote control for HT is required. Actuation of a user will become complicated if remote control of HT for digital one will be added to besides. This invention offers the accepting-station equipment for CATV.

[0004]

[Means for Solving the Problem] The accepting-station equipment of CATV of this invention is equipped with the tuner for digital transmission signals, the descrambling circuit which performs descrambling of a digital transmission signal, the circuit which carries out expanding processing of the compressed digital signal, the circuit which modulates the control signal transmitted from a

CATV broadcasting station, and the microcomputer for control as a fundamental means. Moreover, this accepting-station equipment is equipped with the microcomputer with which the selected channel number judges the channel for analogs, or the channel for digital one to be the 1st tuner for analog transmission signals, and the 2nd tuner for digital transmission signals, and the switch which switches the output of the 1st tuner and the 2nd tuner and is transmitted to TV with the control signal from a microcomputer.

[0005] Furthermore, the remote controller which carries out remote control of the accepting-station equipment is equipped with the switch for analog channel selection, and the switch for digital channel selection. And this accepting-station equipment is equipped with the function to change the boundary of an analog channel and a digital channel with the control signal transmitted from a CATV broadcasting station.

[0006]

[Function] By having the above means, the channel to choose does not need to be conscious of the channel for analog transmission signals, and the channel for digital transmission signals, identifies a channel by the terminal unit side, and outputs a user to TV.

[0007]

[Example] Drawing 1 is the explanatory view showing the outline of the network

system of CATV which serves digital broadcast in addition to analog broadcasting. The system in which the whole is shown with a sign 1 consists of two or more users 30 connected to the CATV broadcasting station 10, the CATV wide area network 20 which transmits the transmission signal of TV number sent out from the CATV broadcasting station 10 through a cable, and this wide area network 20 through a cable.

[0008] The CATV broadcasting station 10 receives the broadcasting electric-wave from which it departs from an earth station, and the broadcasting electric-wave sent from a broadcasting satellite, carries out scramble processing of the service with a still more original movie program etc., and sends it out to a network 20. If a user 30 has, the terminal unit for CATV reception (HT) which attached the signal from this network to each user's TV set receives, the regenerative signal which it descrambled within HT is sent to TV set, and a program is reproduced. As for all of these transmission signals, the analog signal is used if it is in current CATV.

[0009] If the digital broadcasting satellite 50 is launched and it becomes available, a digital signal is transmitted to a satellite 50 from digital Satellite Broadcasters 60 established on the ground, and a satellite 50 will put this signal on an electric wave, and will send it on the ground. The terrestrial individual user 70 can receive this electric wave through an antenna 75, and can enjoy digital

broadcast on TV through the terminal unit for digital broadcast reception. Compared with the playback image of analog broadcasting, the playback image of digital broadcast has high image quality, and has the merit which can transmit and receive a high-definition image.

[0010] The CATV broadcasting station 10 can receive this digital broadcast signal with an antenna 15, can perform scramble processing, can change it into a CATV transmission signal, and can be supplied to a network 20. A user 30 can have the terminal unit for reception of a digital signal, and can receive a digital program.

[0011] Drawing 2 is the circuit diagram showing the configuration of the terminal unit for reception of CATV. If it is in service of CATV under current and operation, the analog home terminal 100 is paid to the user. The analog home terminal 100 is equipped with each device of the analog tuner 120, the descrambling circuit 130, the remote control light sensing portion 140, and system microcomputer 150 grade, and has the CATV transmission-signal input line 110 connected to a network 20.

[0012] The signal of the channel chosen with the analog tuner 120 is sorted out, and the analog signal inputted from Rhine 110 is decoded in the descrambling circuit 130. This signal is sent to the external input terminal of TV from Rhine 160, and an image and voice are reproduced.



[0013] The remote control light sensing portion 140 receives the command from the remote control which a user operates, and the system microcomputer 150 directs actuation of a tuner etc. A user operates remote control of TV, and the remote control 300 for home terminal 100, and is supplied from a network. A program is reproducible. If it is in a current analog program, the channel number is assigned by about 60 channel from the channel 1. If it is in digital broadcast, a bigger number than a channel 61 will be given as a digital channel.

[0014] The digital home terminal 200 for digital broadcast reception is equipped with the digital tuner 210, a detector circuit 220, error detection / correction circuit, the descrambling circuit 240, the MPEG decoder 250, the FSK \*\*\*\*\* circuit 260, the system microcomputer 270, the remote control light sensing portion 280, and transfer-switch 290 grade.

[0015] The digital home terminal 200 chooses the digital signal supplied from an input line 110 with the digital tuner 210, sorts out the signal of the specified channel, and sends it to a detector circuit 220. The digital signal which passed through the detector circuit 220, and the error detection / correction circuit 230 is decoded in the descrambling circuit 240, and is sent to the MPEG decoder 250.

[0016] On the other hand, the signal from an input line 110 is sent to the system microcomputer 270 through the FSK \*\*\*\*\* circuit 260. The remote control light sensing portion 280 sends the directions of a user sent from remote control 300

to the system microcomputer 270. The system microcomputer 270 controls the MPEG decoder 250, elongates compressed data and is reproduced while it operates the digital tuner 210. The reproduced signal is sent to a transfer switch 290 through Rhine 255.

[0017] Through Rhine 272, a command is connected to a transfer switch 290 and the system microcomputer 270 connects output Rhine 255 of delivery and the MPFG decoder 250 to Rhine 295 to the external input terminal of television, when the channel which a user chooses through remote control 300 grade is a digital channel (for example, bigger channel number than a channel 61). The digital program which the user specified by this processing is reproduced with TV.

[0018] If a user chooses an analog channel (for example, channel of either a channel 1 - the channel 60) with remote control 300, the command of remote control 300 will be sent to the system microcomputer 270 from the light sensing portion 280 of the digital home terminal 200 while it is sent to the system microcomputer 150 from the light sensing portion 140 of the analog home terminal 100.

[0019] The system microcomputer 270 of the digital home terminal 200 distinguishes that the command from remote control 300 is an analog channel, outputs a control signal to Rhine 272, and switches the contact 292 of a transfer

switch 290 to the output Rhine 160 side of the analog home terminal 100. The signal of an analog program is supplied to external input Rhine 295 of television by this processing, and the analog program specified by a user is reproduced on television. As mentioned above, according to the channel number specified by a user, a terminal unit distinguishes an analog program or a digital program automatically, and this terminal unit for CATV reception switches the input signal of television.

[0020] Therefore, the program for which a user wishes does not need to specify an analog program or a digital program, and operability improves. In addition, the specified channel number can set up the boundary of an analog program or a digital program freely by changing the software of the system microcomputer 270.

[0021] Drawing 3 is the explanatory view showing an example of the structure of remote control 300. Remote control 300 has the key of various kinds of push button types on casing 301. A key 310 is the input switch of the home terminal 100,200 of CATV, and the power source of a home terminal 100,200 serves as ON by pressing this key.

[0022] A ten key 320 is a key which inputs a channel number. TV power-source key 340 is a key for the power sources of TV, and the input switch key 342 is a key which switches the input of TV to an external input and an input from an

antenna side. The sound-volume key 330 and the silence key 332 are keys which control a voice output, and the channel key 350 is a key for searching the channel number.

[0023] For example, the analog key 362, the digital key 364, and the EPG key 366 are prepared using some keys of the alphabet keyboard 360. In case the analog key 362 chooses only an analog program, it is used, and in case the digital key 364 chooses only a digital program, it is used for it. The EPG key 366 is a call key for an electro nick program guide, and in case the \*\*\*\* menu prepared by digital broadcast service is called to a television screen, it is used. Although the array of the keyboard of the remote control mentioned above is equipped with a fundamental function, various layouts, such as having a display means on remote control, are possible.

[0024] Drawing 4 is the explanatory view showing the procedure of starting a new subscription user's accepting-station equipment from the CATV broadcasting station side in the CATV network system of this invention. Completion of a CATV reception contract connects a user's 30 TV to a network 20 through the digital home terminal 200 explained by drawing 2 .

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user can access, and a class, and analog digital change-over data are used in order to order it the data of the boundary of the analog channel stored in the system microcomputer 270 of the digital home terminal 200, and a digital channel. These control signals are sent to the system microcomputer 270 through the FSK strange demodulator circuit 260 from Rhine 110.

[0026] Although a transmission signal is sent from the CATV broadcasting station 10 to a user's 30 home terminal and the thing without a response is shown in the CATV broadcasting station 10 side from the home terminal side if it is in this system, naturally a bidirectional CATV system is also applicable.

[0027]

[Effect of the Invention] Since this invention sends the signal with which it has a transfer switch with the home terminal for the analogs of existing [ the home terminal for digital one ], and a home terminal judges a digital channel or an analog channel automatically, and corresponds according to the selected channel number to a television side in case it serves the program of a digital transmission signal as mentioned above to the CATV network system using the analog transmission signal which is carrying out current spread, a user's user-friendliness becomes very good.

[0028] The boundary of an analog channel and a digital channel can be chosen freely. If it is in this equipment, since it considers as the configuration which

changes this boundary in software with the system microcomputer of a home terminal and this software is changed with the control signal from a CATV broadcasting station, actuation of a user is not needed. As mentioned above, effective accepting-station equipment can be offered to the CATV network system which performs digital broadcast service.

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effective accepting-station equipment can be offered to the CATV network system which performs digital broadcast service.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The explanatory view showing the outline of the CATV network system which applies this invention.

[Drawing 2] The block diagram showing the configuration of the accepting-station equipment of this invention.

[Drawing 3] The explanatory view showing Key Caps of remote control of the accepting-station equipment of this invention.

[Drawing 4] The explanatory view showing the command sent out from a CATV broadcasting station to a user's accepting-station equipment.

[Description of Notations]

10 CATV Broadcasting Station

20 CATV Wide Area Network

30 User

50 Digital Broadcasting Satellite



60 Digital Satellite Broadcasting Service Sending Station

100 Analog Home Terminal

200 Digital Home Terminal

300 Remote Control